

# Fish & Fisheries Resources Of Champaran (East And West) District Of Bihar, India With Special Reference To Introduced & Threatened Species Of Inland Fishes

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(Date of Receipt : 01-03-2013; Date of Acceptance for Publication : \*\*-\*-\*\*\*)

## Abstract

Freshwater species especially fishes are more in danger throughout the world. It has been estimated that 71 % of extinctions were related to habitat alteration, 54% to exotic species, 26% to pollution & rest to hybridization & diseases. The present investigation is related to the topography, fishery resources, existed, introduced, threatened & new record of fish species of the Champaran (East & West ) district of Bihar, India which support a significant proportion of the India's ichthyodiversity.

**KeyWords** : Fish,Fisheries Resources,Champaran,Introduced,Threatened,Fish Species.

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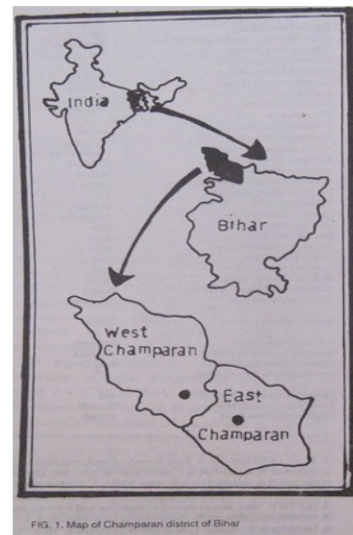
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## INTRODUCTION

The name Champaran is a degenerate form of Champakaranya , a name which, dates back to the time when the district was a tract of the forest of Champa trees (*Michelia champaca* ) and was the abode of solitary ascetics.

The district of Champaran (West & East ) (Fig.1) forms the extreme north –western portion of the Tirhut Division and the State of Bihar, lies between 26° 16' and 27° 31' N. latitude, and between 83° 50' and 85° 18' E. longitude .The district extends over

an area of 3525 square miles .The district is bordered on the north and north-east by Nepal; on the south-east and south by the district of Muzaffarpur; on the south east by Gopalganj and on the north-west by the State of Uttar-



Pradesh.

## **FISHERIES RESOURCES OF CHAMPARAN**

The general line of drainage is first from north to south and then from north-west to south-west, the latter being the **pre-dominant** course of the rivers. To the west the Gandak flows along the whole length of the district except for small strip of land, forming the Dhanaha police station which lies to the west of it adjoining Gorakhpur. Besides these boundary rivers, there are a considerable number of rivers and streams of which the most important is the Little Gandak or Sikrahana. The main tributaries of the Gandak are the Bhabsa Nadi, The Harha Nadi and the Bara Harha. To the north east the Uria forms part of the boundary, while to the south east the district is bounded throughout its length by the Lal Bakeya and Baghmata rivers. Besides these boundary rivers, there are a considerable number of rivers and streams of which the most important is the Little Gandak or Sikrahana. Earlier it was believed to take its rise in the western **extremity** of the **Someswar** range but actually it rises from the Chautarwa *Chaur*, which in turn, fed by a number of hilly streams such as Manguraha, Sakti, Haraha etc. The Little Gandak flows through the centre of the district from north-west to south-east. In the northern portion of its course it is known as the Sikrahana and in the southern portion as the Burhi Gandak. The catchment area of the river, which is partly hilly and partly plain, falls in Nepal as well as in Champaran. The catchment area in Nepal upto Indo-Nepal border is 961 square miles, and 211 square miles in Champaran. During its course through the Champaran district the Sikrahana is fed by a number of hilly torrents, namely the Masan, the Belor, the Pandai, the Uria,

the Tilaway, the Teur and the Kinbara. The Sikrahana has a continuous chain of old and abandoned channels, namely, Chatnaha Kachha Nala or Bakeya Nala, Haradia Nala and Babua Nala or Puraini Dhar.

The river Lal Bakeya is a hilly stream and takes its rise in the foot-hills of Nepal. It forms the eastern boundary between Champaran and Muzaffarpur and meets the Great Baghmata at Khoripakar.

The river Baghmata rises in the inner valleys in Nepal hills near Kathmandu and is a snow fed river. The river after forming the boundary of the district of Champaran from Khoripakar to Sugar Pipar enters in the Muzaffarpur district. Besides the rivers mentioned above the only other river of some importance is the Lalbegi which flows into the Gandak to the north of Gobindganj.

There are several other minor streams or rivulets flowing in the district which join with one or the other big river of the district.

A remarkable physical feature of Champaran is a chain of lakes 43 in number, running through the centre of the district (Chaudhury, 1960). These lakes, of which the largest one at Lalsaraiya, Sugaon, Turkaulia and Tetaria, extend over an area of 139 square miles, and evidently mark an old bed of the Great Gandak. There are also a number of swamps and marshes scattered over the district, of which one of the most remarkable is the one known as Bahas along the borders of tappas Bahas and Balthar.

There are four big canals in the district viz. Dhaka canal, Tiur canal, Tribeni canal and

Gandak project.

In addition to the above mentioned inland fisheries resources there are also a number of tanks and ponds in the district which are used for pisciculture.

Compared to the terrestrial and marine organisms, freshwater species are more in danger throughout the world (Mc Allister *et. al.*, 1997, Stein *et. al.*, 2000). Approximately 30 % of the fishes (mostly freshwater) included in the Red list of IUCN Species Survival Commission 2000). In a global analysis of fishes it has been estimated that 71% of extinctions were related to habitat alteration, 54% to exotic species, 26% to pollution and rest to hybridization, parasites and diseases, or intentional eradication (Harrison and Stiassny, 1999). Exploitation is more important threat to freshwater fish diversity in some developing countries (welcomme, 1979 and 1985).

## FISHES OF CHAMPARAN

Among the bigger ones rivers contains Rohu (*Labeo rohita* (Ham.)), Boari (*Wallago attu* (Bl. & Schn. )), Moi (*Notopterus chitala* (Ham.)), Katla (*Catla catla* (Ham.)), Tengra (*Mystus sps.*), Sauri (*Channa striatus* Bl.), Bami (*Mastacembelus armatus* Lecepede) and Bansari and among smaller ones Rewa (*Chirrhina reba* Ham.), Bachwa (*Eutropichthys vacha*), Chepua (*Aspidoparia morar* Ham.), Pothia (*Puntius sophore* Ham.), Kana (*Xenentodon cancila* Ham.), Jalkapur (*Ompok bimaculatus* (Bloch)), Garai (*Ophiocephalus gachua* Ham.), and Tengra (*Mystus sps.*).

In lakes of Champaran most of the above fishes are found and in addition Kewai (*Anaplas testudineus* Bloch), Mangur (*Clarias*

*batrachus* Linn.) Singhi (*Heteropneustes fossilis* Bloch) and several coloured fishes are found.

The common species of fishes in the district are :

**Carp**- Rohu, Katla, Naini and Calvasu

**Cat fish**- Boari, Tengra, Silonal, Bangas and Bachwa

**Murrels**- Garai, Sawra and Chenga

**Feather back**- Moi and Chitla

**Seasonal fish**- Hilsa and Gorarah

**Miscellaneous fish**- Pothia, Chelwa, Bami, Gaineha, Chengri and Mahseer.

## NEW RECORD OF FISHES

During course of investigation Mishra *et. al.*, (1994, 1994, 1995, 1995, 1995, 1997, 2000, 2001) recorded eight new records to the ichthyofauna of Champaran in particular & State of Bihar in general viz. *Garra gotyla stenorhynchus* Jerdon, *Lepidocephalus annandalei* (Chaudhary), *Labeo microphthalmus* (Day), *Nemachilus rupecola rupecola* (McClelland), *Puntius terio* (Ham.), *Botia Dayi* Hora, *Somileptes gongota* (Ham.) & *Glyptothorax cavia* (Ham.), These new record indicate the possibilities of more new fish record in the changed climatic conditions of this district.

## THREATENED SPECIES OF FISHES

Biodiversity is now under serious threat. All biota based enterprises are entirely dependent on biodiversity. Threatened species of fishes includes the following categories (Source ; Dutta, 2006 ).

**Extinct** - A species not definitely located in the wild during the last 50 years.

**Endangered** - A taxon in danger of extinction and whose survival is unlikely if the casual factors continue to operate.

**Vulnerable** - A taxon believed likely to move into the endangered category in near future if the casual factors continue operating.

**Rare** - A taxon with small world population that is not at present endangered or vulnerable but is at risk.

**Indeterminate** - A taxon known to be endangered, vulnerable or rare but where there is not enough information to say of the three categories is appropriate.

**Insufficiently Known** - A taxon that is suspected but not definitely known to belong to any of the above of the categories because of lack of information.

According to the Gagetters of the district Hilsa and Gorarah are not available in the district since last few seasons and the miscellaneous fishers like Pothia, Chelwa, Bami, Gaineha, Chengri and Mahseer which is mentioned in the old Gazetters of this district seems to have become extinct. In addition to the above mentioned fishes several fishes like Boari, Chepua, Singhi etc. are also on the verge of extinction.

## INTRODUCED SPECIES OF FISHES

Grass carp (*Ctenopharyngodon idellus*) (Valenciennes); Common carp (*Cyprinus carpio Linnaeus*); Silver carp (*Hypophthalmichthys molitrix*) (Valenciennes); Tilapia (*Tilapia mossambica*) (Peters) and Mangur (*Clarias garipienus*) have been introduced in the district which rapidly enhanced the fish production but have negative impacts on native biodiversity and ecological integrity. However, such negative impacts

are rarely quantified (Naiman *et. al.*, 2002).

## ANTHOPOGENIC IMPACTS ON RIVER ECOLOGY AND FISHERIES

Many types of river ecosystem have been lost and population of many riverine species have become highly fragmented due to human intervention (Dynesius and Arthington, 2002).

The human activities damaging and degrading river system includes (1.) Climate change (2.) Catchment land- use change (3.) River corridor engineering and (4.) Instream impacts (Arthington and Welcomme, 1995; Junk, 2002).

The Champaran district have been subjected to considerable human pressure due to developmental activities like urbanisation, Industrial activity, tourism, road network, construction and simultaneous rise in population. The kind of human activity to which the freshwater resources of Champaran district are subjected in the decreasing order of importance in terms of pollution are: human bathing, cloth washing, cultural activities, sewage disposal including open defecation, agriculture and deforestation in the catchment area, industrial waste disposal and recreation.

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